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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/364,423 | 07/30/1999 | MAKOTO WATANABE | 12854 | 9435 |

7590 05/22/2002

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EXAMINER

NGUYEN, DUNG T

| | |
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| ART UNIT | PAPER NUMBER |
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2871

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/364,423

Applicant(s)
Watanabe et al.

Examiner
Dung Nguyen

Art Unit
2871



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above, claim(s) 3, 4, 7, 8, 10, 11, 13, 14, 17, 18, 21, and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 6, 9, 12, 15, 16, 19, 20, and 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

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DETAILED ACTION

Applicants provisionally elected group A in paper No. 6, filed 02/21/2002.

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-6, 9, 12, 15-16, 20, 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al., US Patent No. 6,064,460, in view of Numano et al., US Patent No. 6,313,898.

Regarding claims 1, 5, 15, 19, 23-27, Ohta et al. disclose an in-plane switching (ISP) liquid crystal display (LCD) device (figures 1A-1D) comprising:

a pair of substrates (SUB);

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liquid crystal molecules (LC) in a liquid crystal layer;
a pixel electrode (PX);
a counter electrode (CT);
a pair of alignment layers (ORI); wherein an alignment process is carried out such that the alignment of a pixel aperture region of the alignment layers has an inclination of angle θ (figs 1C and 1D).

Ohta et al. do not disclose the alignment process is carried out such that the alignment layer of a pixel aperture region is different from a signal line regions. Numano et al. do disclose that alignment of alignment layers differs at regions (19a) of a signal lines (7) and their vicinities (e.g., pixel aperture region) (see figure 7). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to modify the Ohta et al. device having an alignment layer in which liquid crystal molecules at a pixel region are aligned different from that at a signal line as shown by Numano et al. in order to obtain an LCD device which is high in aperture ratio and is free from the cross talk (see abstract).

Regarding claims 2, 6, 9, 12, 16 and 20, although the modification of Ohta et al. do not disclose liquid crystal component having a positive dielectric constant anisotropy, it would have been obvious to a person of ordinary skill in the art at the time the invention to use liquid crystal molecules having a positive dielectric constant anisotropy in an LCD device because it is notoriously well known in the art to reduce a driving voltage in the LCD device.

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Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mizunuma et al. (JP 10-48652) disclose an ISP LCD having a liquid crystal material comprising a positive dielectric constant anisotropy.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dung Nguyen whose telephone number is (703) 305-0423. The fax phone number for this Group is (703) 746-7730.

Any information of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956.

DN
05/16/2002


William L. Sikes
Supervisory Patent Examiner
Group 2871